PCT/AU00/00281

PRIORITY DOCUMENT

SUBMITTED OR TRANSMITTED IN COMPLIANCE WITH RULE 17.1(a) OR (b)

Patent Office
Canberra

I, LEANNE MYNOTT, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. PQ2205 for a patent by MICHAEL RAFFAELE and PETER RAFFAELE filed on 13 August 1999.

WITNESS my hand this
Eleventh day of April 2000

LEANNE MYNOTT
TEAM LEADER EXAMINATION
SUPPORT AND SALES

This invention relates to improvements to fluid devices more particularly to devices colloquially known as scotch yoke engines. We have lodged a number of applications in respect of these matters namely PP9266, pp9306, pp9573, PQ0287, Pq0795, PQ0895 PQ0989, PQ1653, Pq1654, and others, these applications we incorporate herein.

In some of these applications we disclose slider blocks that are in use split. This is at variance to the usual practice of having the two halves of the slider block physically joined to each other, and this splitting of the halves allows the slide block halves to float independently of one an other, also in having them split there are fewer parts in that there is no need for bolts etc to join said halves.

It has now been discovered that the slide block halves need only to be separated physically from each other by a very small amount ie something less that 40 thousanths of an inch. And in some embodiments less than 5 thousanths of an inch. The idea being that the slide block halves are separate from each other in that they are not bolted or fixed together, but are in communication with each other by way of an oil body or film that lays between them or is fed or maintained between them, where there faces meet. Said faces being of sufficient size and orientation to each other to enable a practical amount of communication to proceed between said slide block halves via said oil. Importantly the slide block halves equipped with such a small distance between them are not subjected to such variance in oil pressure and supply in their relationship with the crank big end journal and the lineal slide ways of the yoke assembly, as when the slide block halves faces are further away from each

other. This closeness of the faces is a way of keeping the oil feed hole or holes, which, if they are located in the big end journal, substantially or in effect, covered during the orbit of the slider block as its respective big end rotates about the cranks main axis. By covered, we mean that there is in effect, no, or very little, opportunity for the oil feed to be interrupted or diminished between the big end journal and the slide blocks rotative and linear motion bearing surfaces and volumes. This improvement may be better understood from the non-limiting drawings and their descriptions appended herein. Accordingly,

Figure 1 is a plan view of an individual slider block half

Figure 2 is a plan view of two individual slider block halves 1,2, arranged about a big end 7, wherein the faces 3, 4, 5, 6, of said halves 1, 2, are located at a substantial distance [approx 10mm] from each other.

Figure 3 is a plan view of two individual slider block halves 1, 2, arranged about a big end 7, wherein the faces 4, 3, 5, 6, of said halves, are located at a far closer distance to each other, [approx .5 mm] than the faces respective locations and orientation disclosed in the figure 2 device or layout.

Furthermore we hereby add further drawings to our earlier applications, these added drawings depict more convenient ways of assembling the yokes in horizontally apposed scotch yoke devices and better configurations / physical layouts of the yokes in such devices. Fig 6 shows a yoke lay out familiar in the prior art, in that the yoke halves 22A and 22B are joined at A1 and A2, at B1and B2, at C1 and C2, at D1 and D2. Fig 7 shows a yoke layout unique to our invention in that the yoke halves 22A and 22B are joined at A1 and A2, at B1 and B2, at C1 and C2, at D1 and D2. Fig 8 shows a yoke layout unique to our invention in that the yoke halves 22A and 22B are joined at A1 and A2, at B1 andB2, at C1 and C2, at D1 and D2. Figure 9 is a yoke layout unique to our invention in that the yoke halves 22A and 22B are joined at A1 and A2, at B1 and B2, at C1 and C2, at D1 and D2. Pistons may be attached at 15. Figure

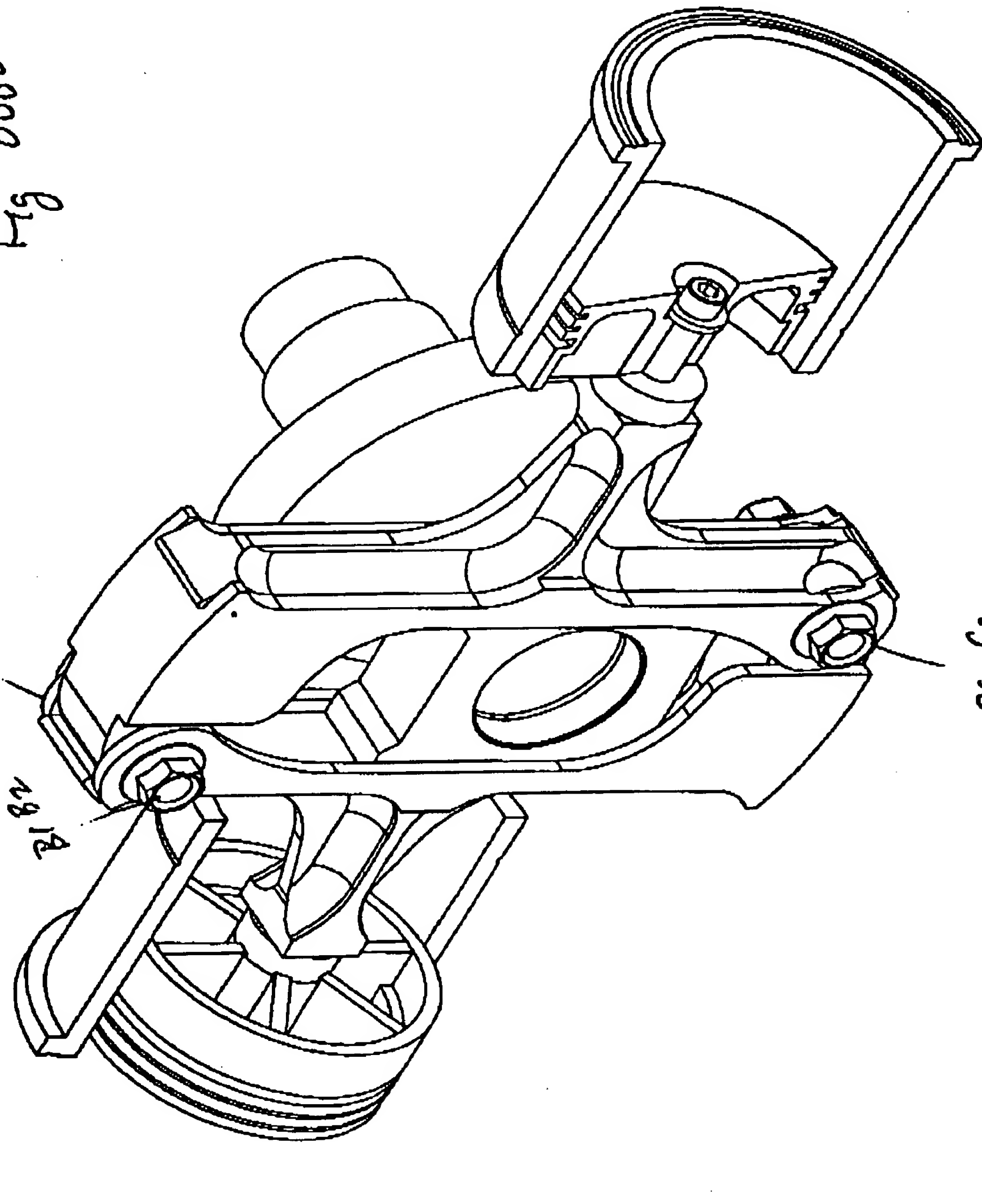
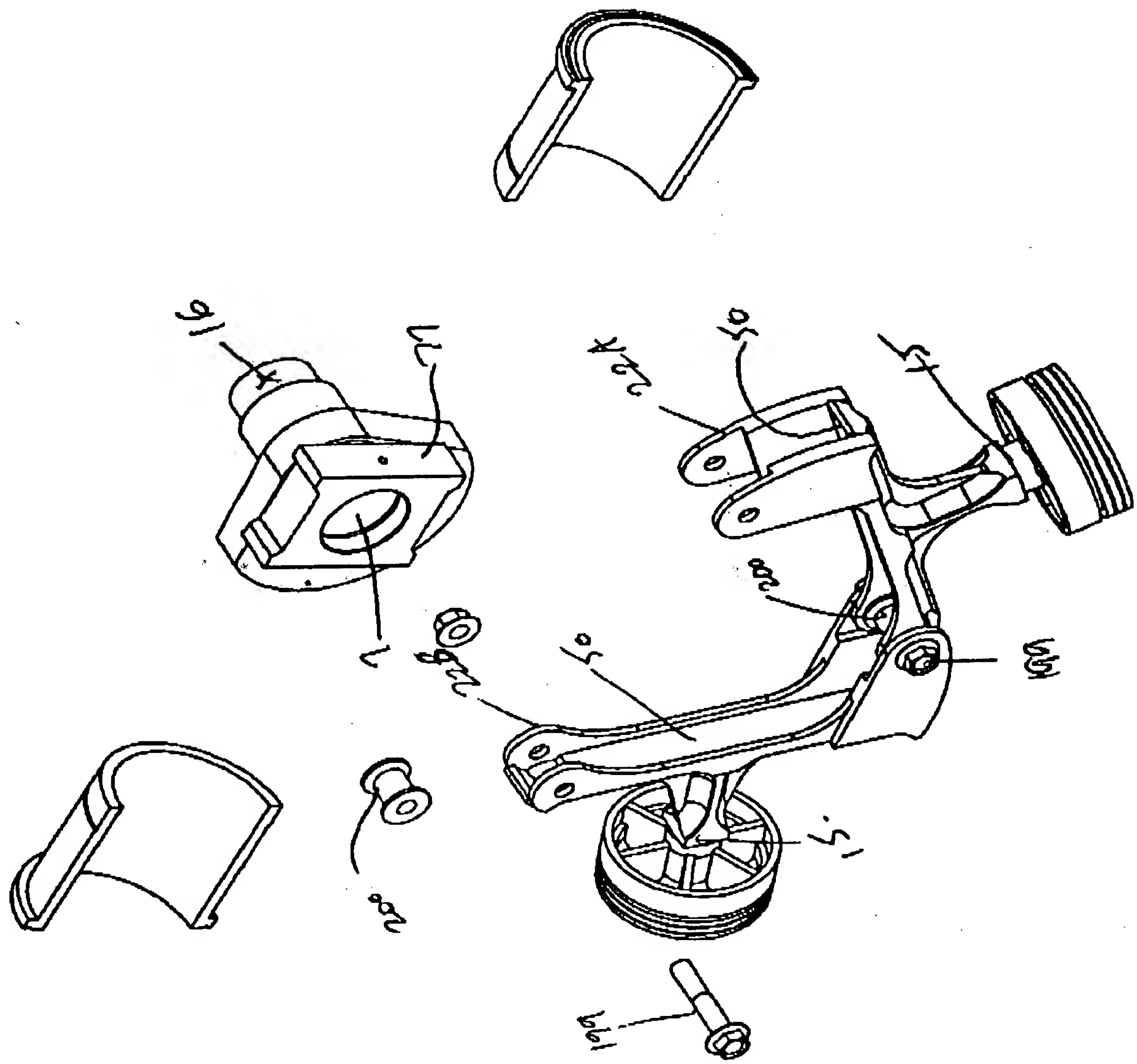
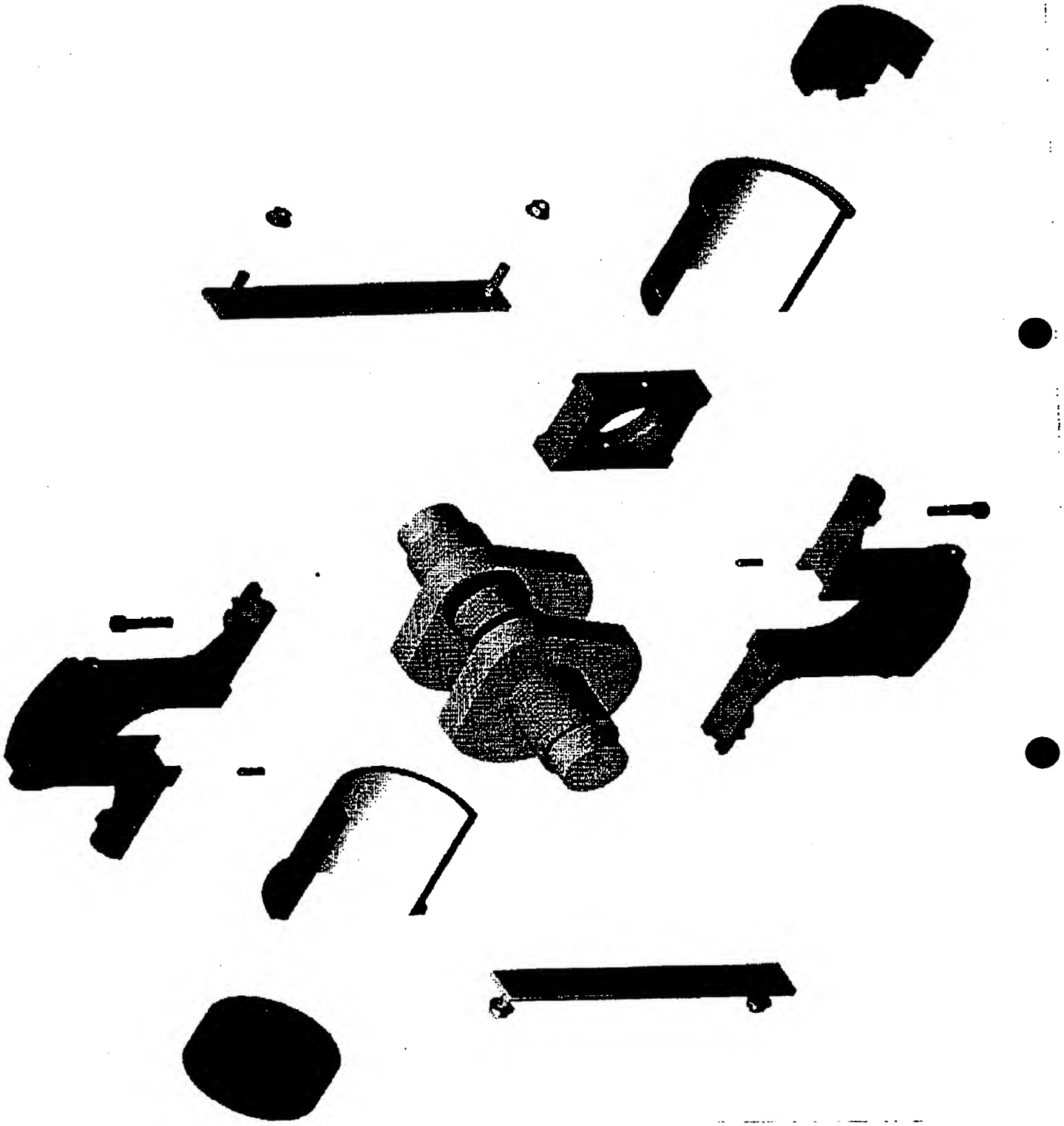
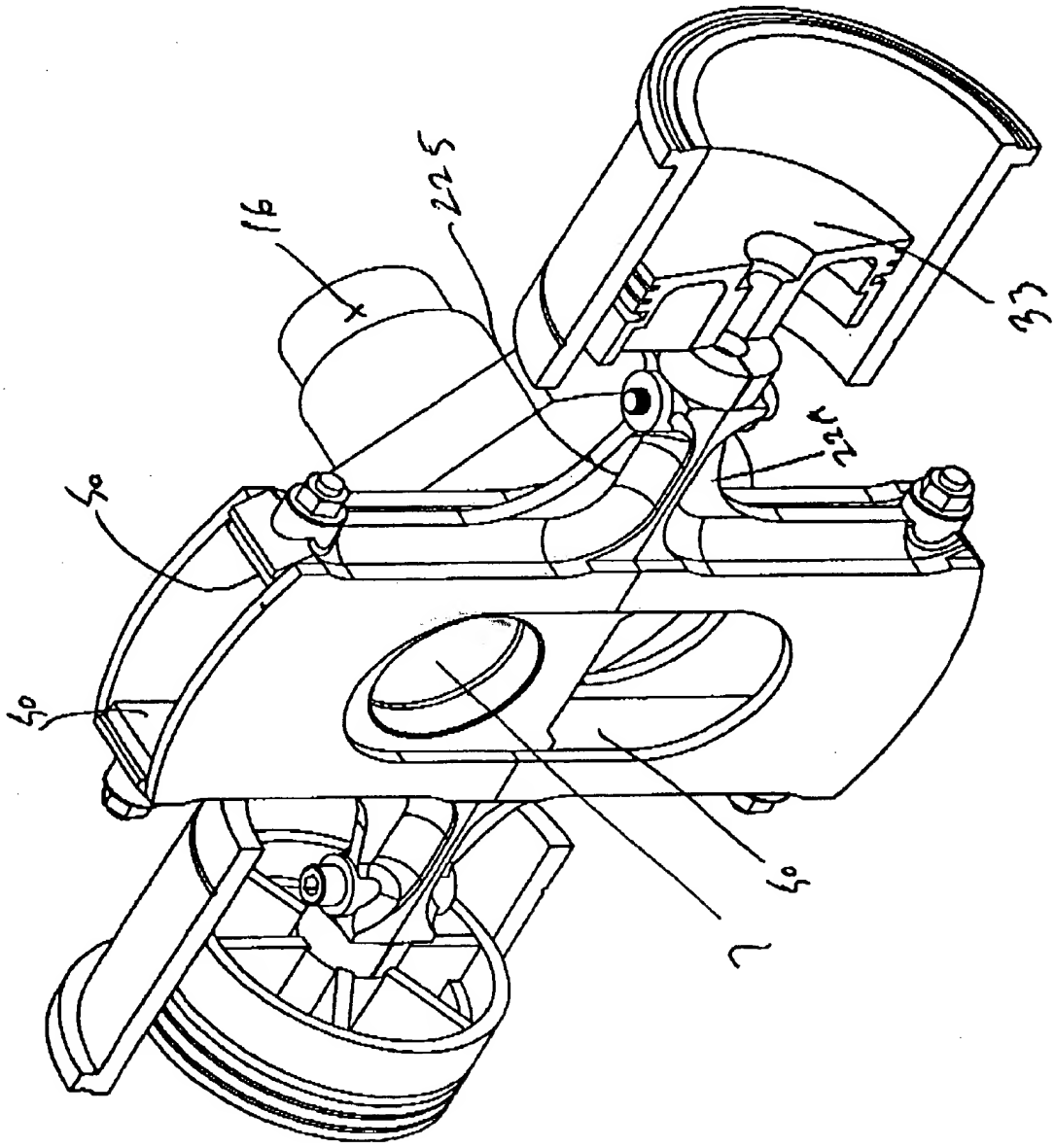
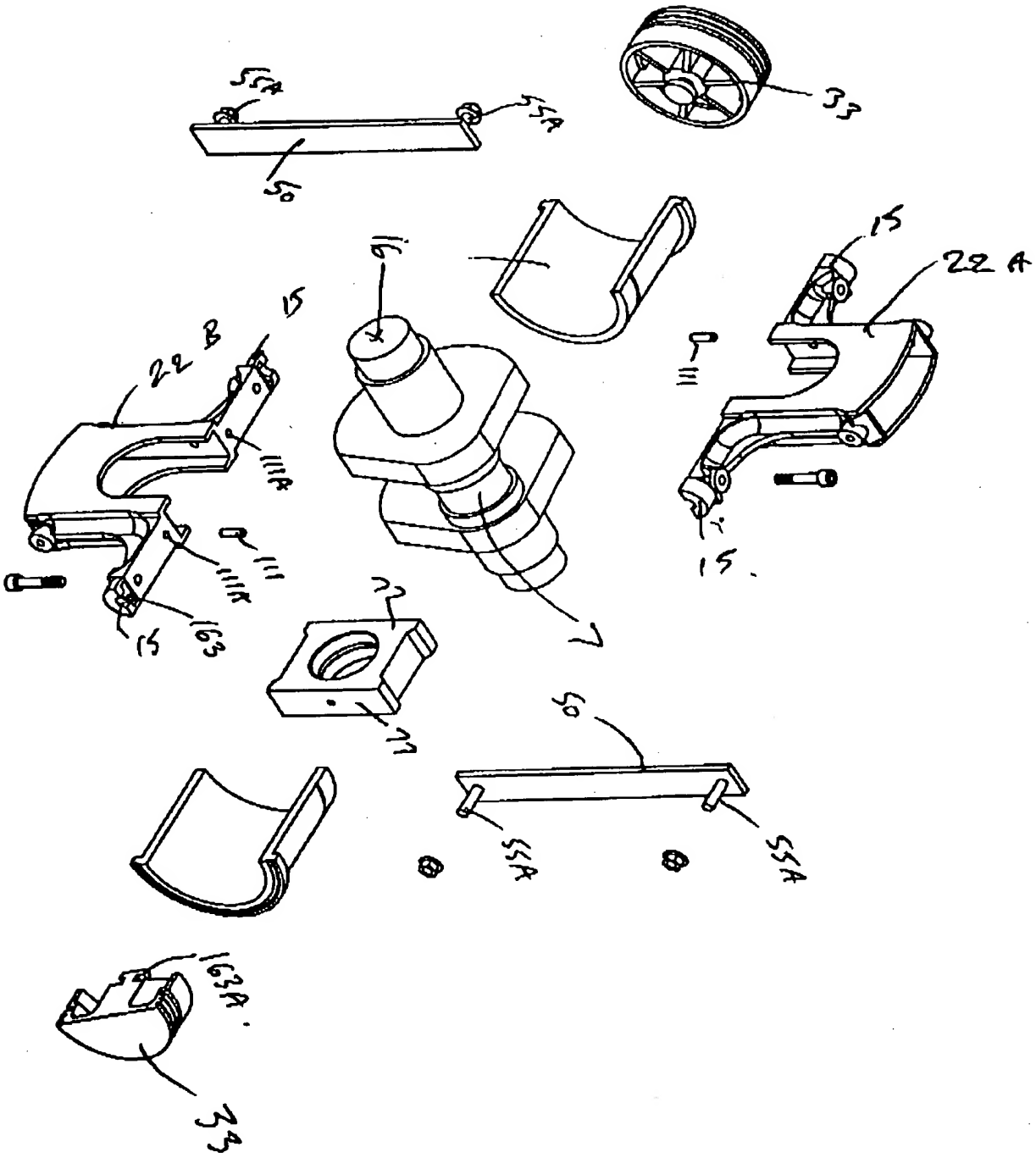


Fig 8888


199
200
15
50
7
77
16




16
225
33
22A
40
40
40
7


55A
55A
50
33
16
15
22 A
22 B
15
111A
111
111A
15
163
15
7
72
77
50
55A
55A
163A
33

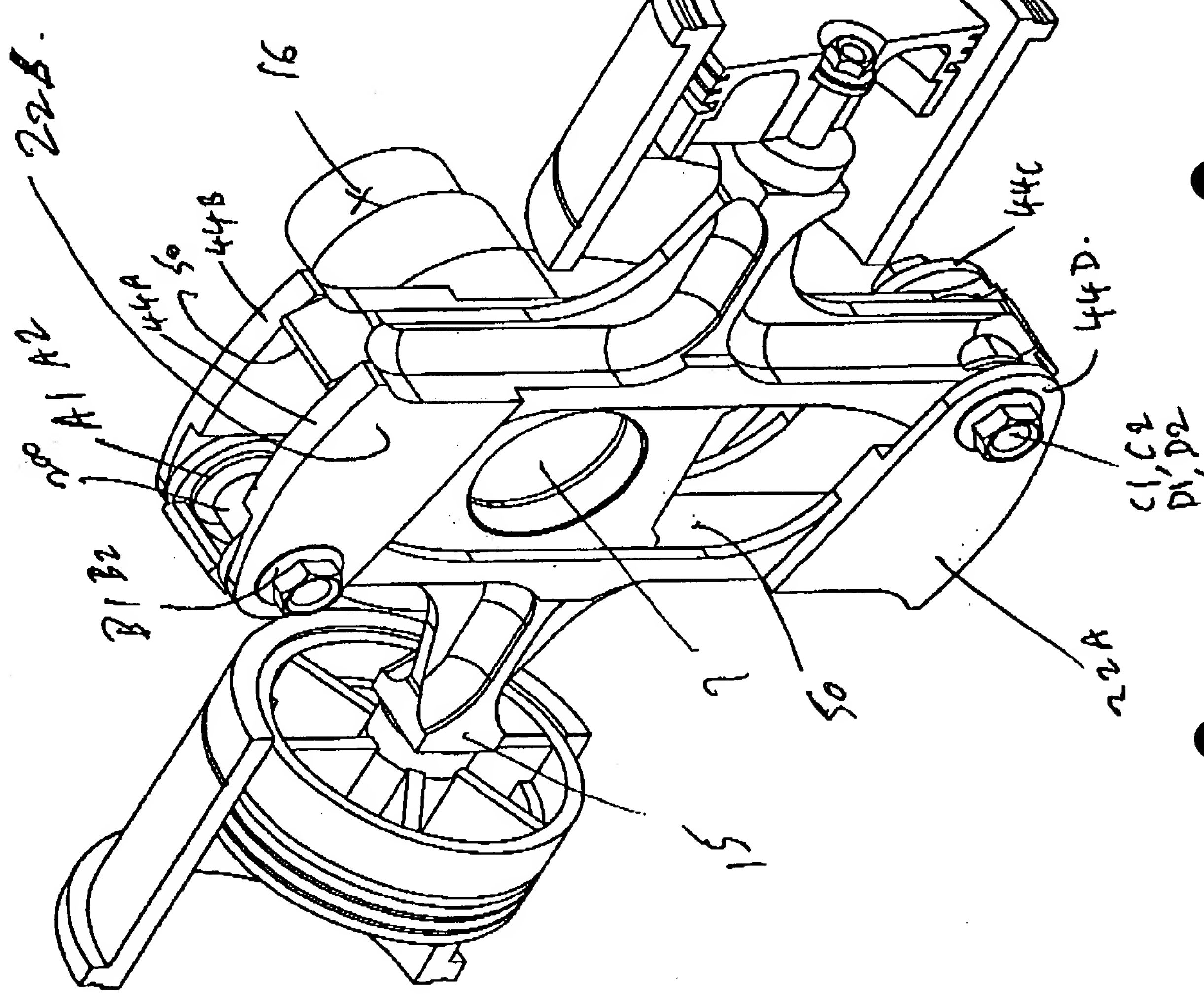


fig 88B

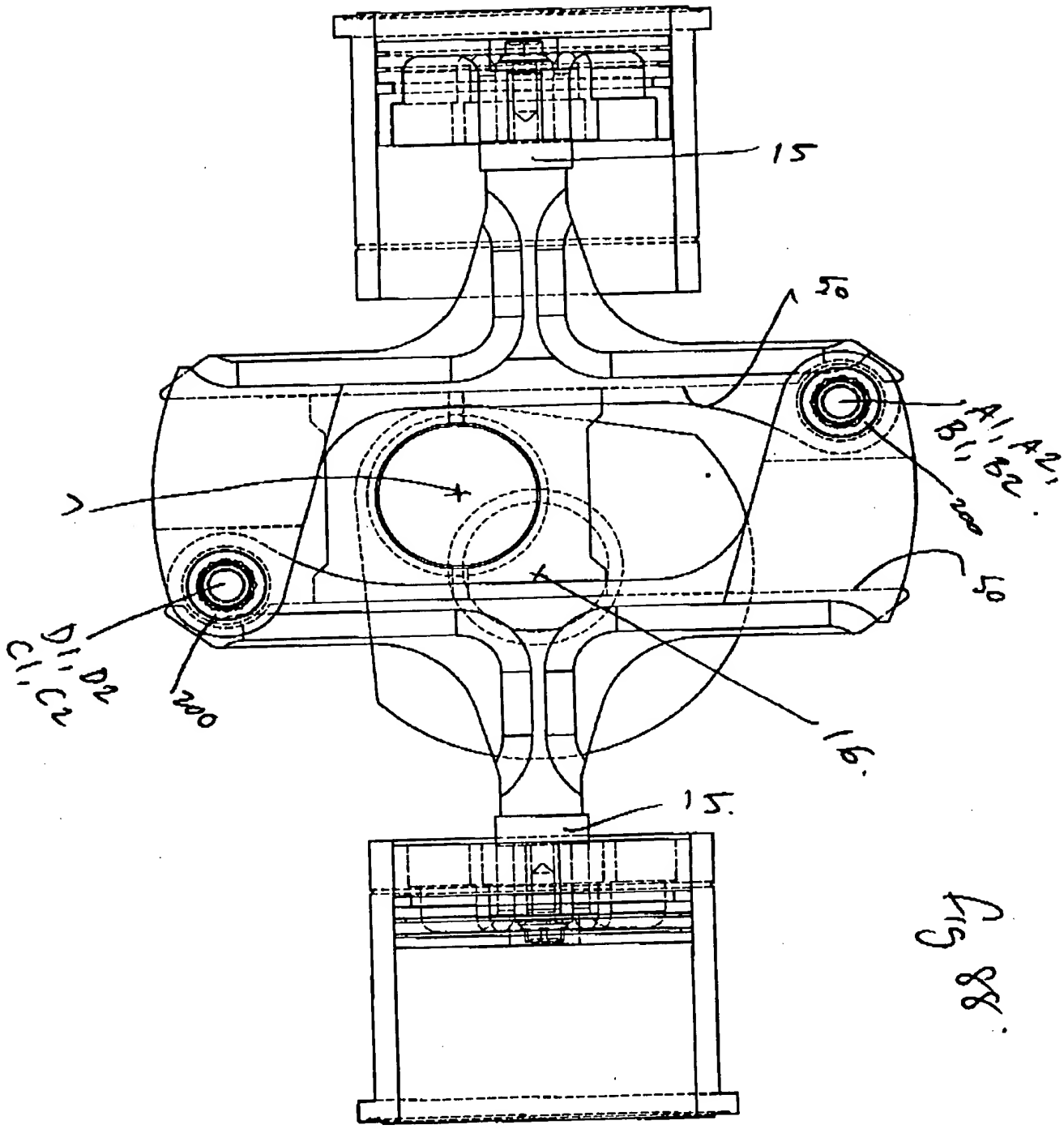


Fig 8.

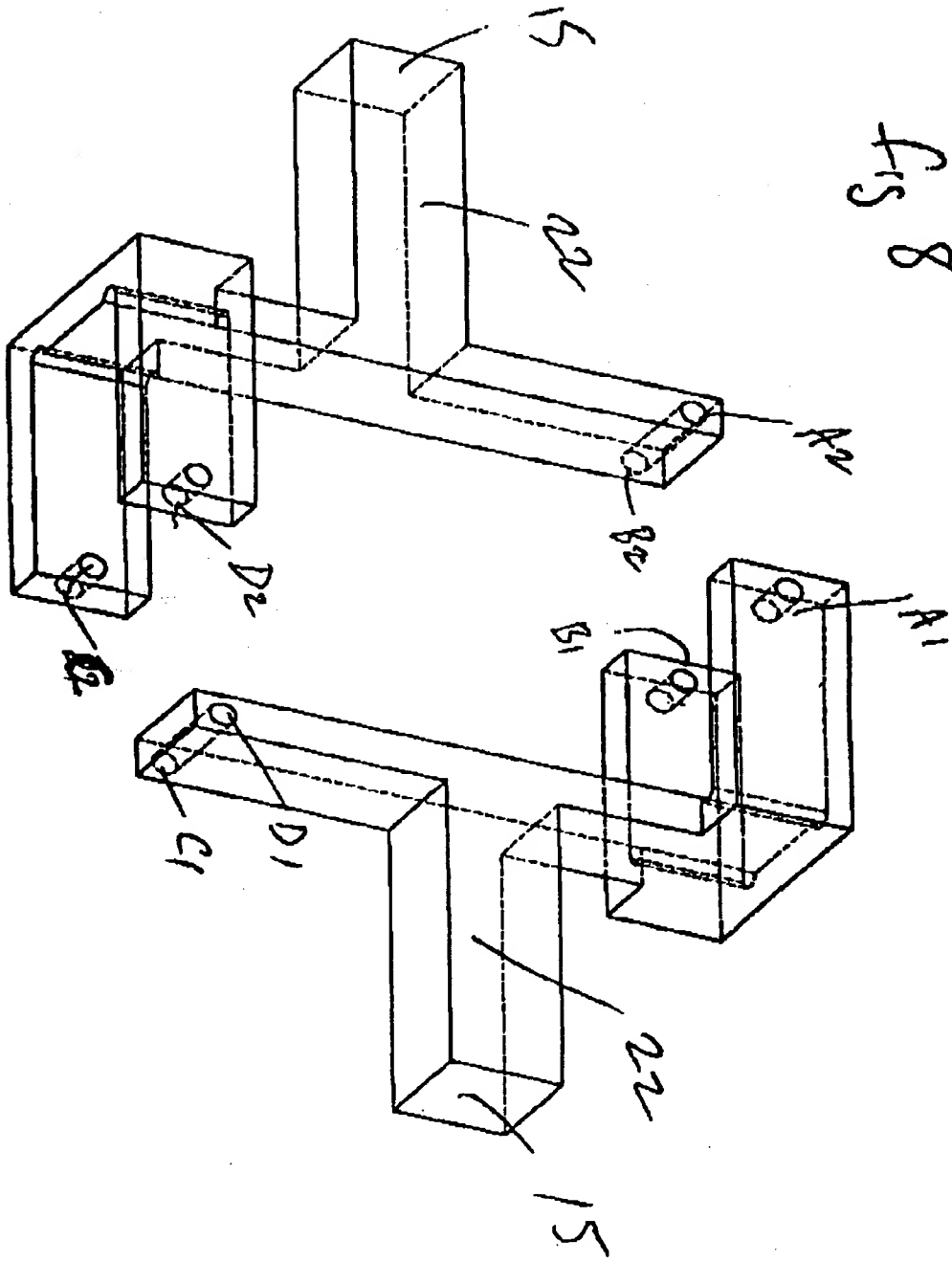
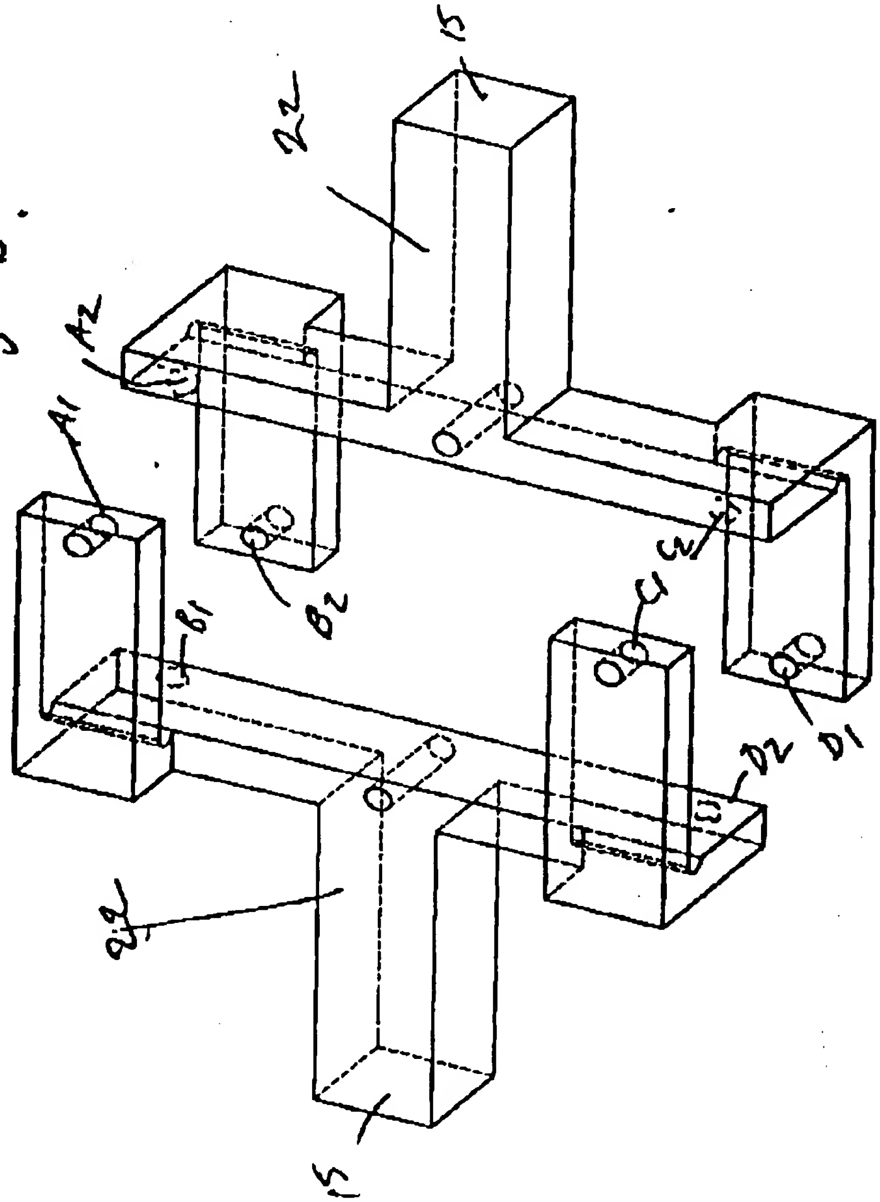


Fig 8

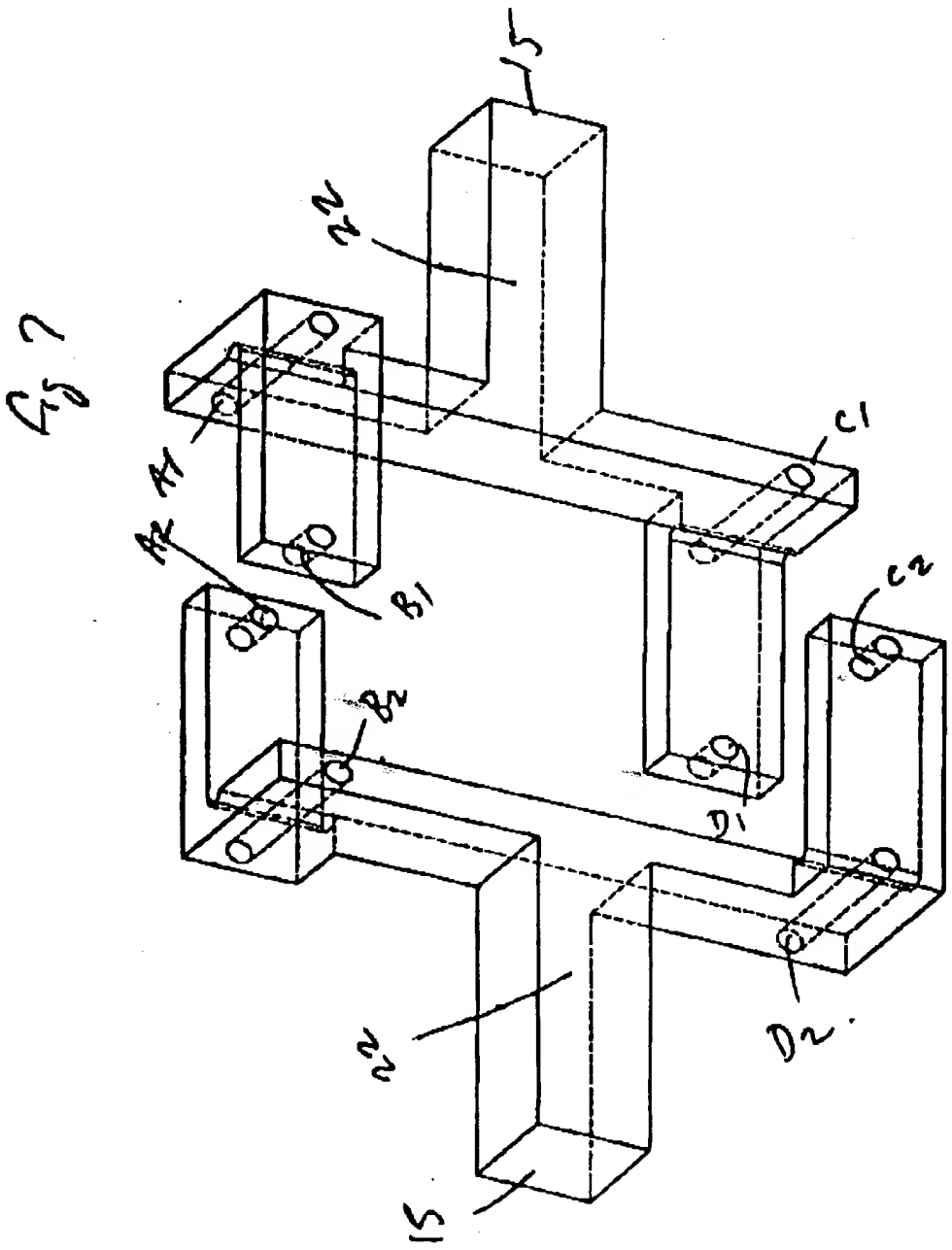
THAUMATURGE P/L FAX 61-2-9975-2213 PAGE 21

THAUMATURGE P/L FAX 61-2-9975-2213 PAGE 02

Fig 6.



THAUMATURGE P/L FAX 61-2-9975-2213



THAUMATURGE P/L FAX 61-2-9975-2213 PAGE 04

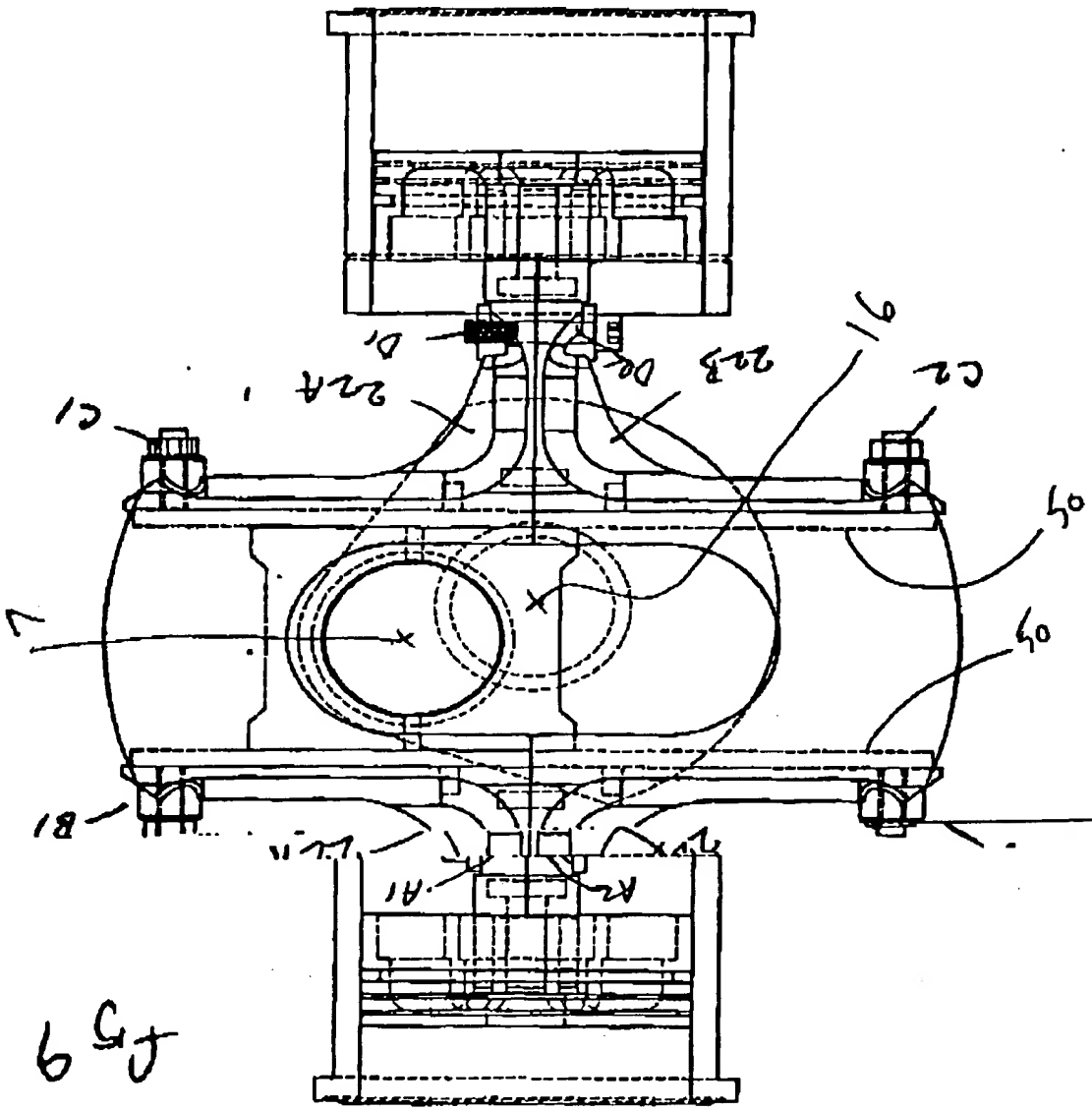


Fig 9

THAUMATURGE P/L FAX · 61-2-9975-2213

fig 10

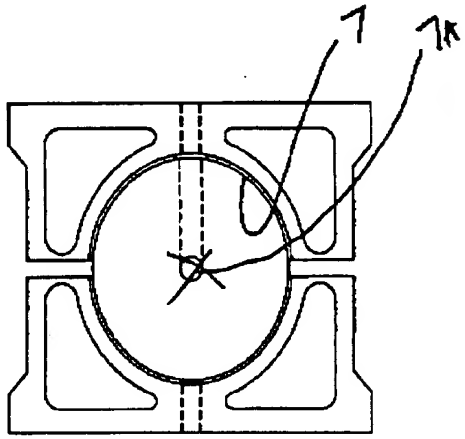


fig 11

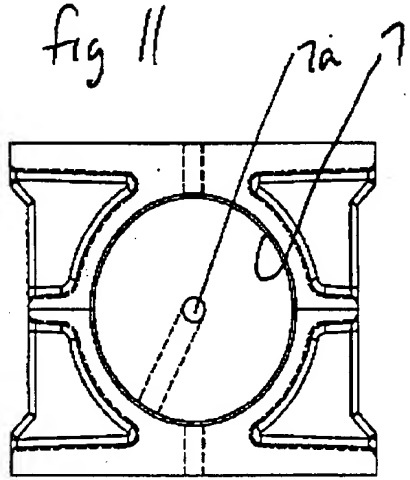


fig 12

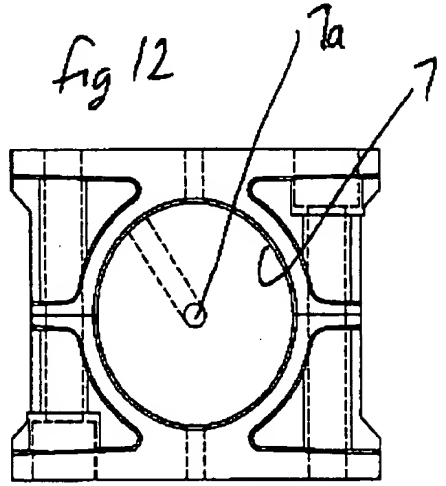


fig 13

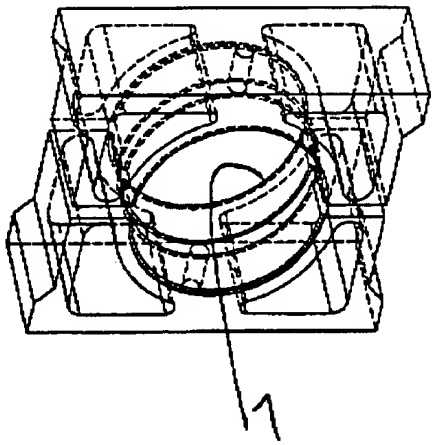


fig 14

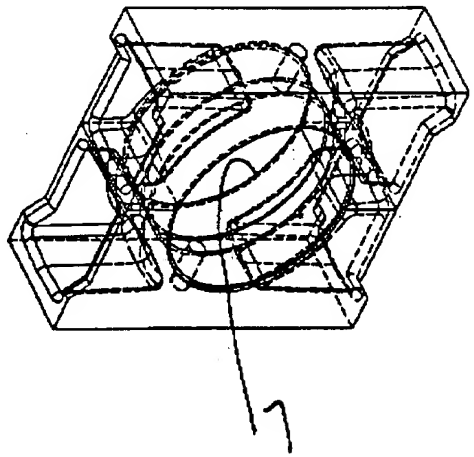


fig 15.